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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/548,405

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Masatoshi Kuroda

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EXAMINER

CHANG, VICTOR S

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

12/03/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/548,405	Applicant(s) KURODA ET AL.	
	Examiner VICTOR S. CHANG	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5 and 6 is/are pending in the application.
- 4a) Of the above claim(s) 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Introduction

1. Applicants' amendments and remarks filed 9/23/2008 have been entered. Claims 1-3 and 6 are active.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. In response, new grounds of rejection have been set forth below. The grounds of rejection not maintained are withdrawn.

Rejections Based on Prior Art

4. Claims 1-3 and 6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Peters et al. [US 3321765].

Peters' invention relates to a Luneberg lens. It is essential that the lens part has uniform dielectric constant throughout [col. 3, ll. 65-67]. The lens part is formed by molding pre-expanded thermoplastic foam particles [col. 3, ll. 57]. To obtain required dielectric constant, the thermoplastic is loaded (filled) with a material such as titanium dioxide (inorganic filler) [col. 4, ll. 40-43]. Granules of the thermoplastic are sieved into narrow size ranges [col. 4, ll. 66]. In order to obtain improved uniformity the particles may be sieved after expansion [col. 5, ll. 23-24]. If there is a discrepancy between the weighed quantity of granules and the quantity required to fill the mould chamber, some of the smaller or larger particles may be removed by sieving and the weight made up with larger or smaller particles [col. 5, ll. 52-56].

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For claim 1, Peters is silent about: 1) the range of resin/filler volume ratio, 2) the foamed layer has a dielectric constant of 1.5 or more, and 3) the pre-expanded beads have been uniformly classified by gravity separation to a range of specified expansion characteristics. However, regarding 1) and 2), since Peters teaches that a Luneberg lens made of pre-expanded beads of thermoplastic resin with required amount of inorganic filler of a high dielectric constant, workable ratio of resin/filler ratio, and the dielectric constant of foamed layer are deemed to be either anticipated by Peters, or obviously provided by practicing the invention of prior art, dictated by the same utility as the claimed invention. Regarding 3), since Peters teaches that it is essential that the lens part has uniform dielectric constant throughout, and pre-expanded particles may be sieved to obtain improved uniformity of the molded lens part, as set forth above, a workable uniformity in dielectric constant is deemed to be either anticipated by Peters, or obviously provided by practicing the invention of prior art. Regarding the gravity separation process, since the limitation has not been shown on the record to produce a patentably distinct article, the formed articles are rendered *prima facie* obvious, and this limitation at the present time has not been given patentable weight.

For claims 2 and 3, absence of any supposed errors being pointed out by applicants' response, the Official notice in the prior Office action "various titanate species, including barium titanate, strontium titanate, etc., are common and well known inorganic fillers having equivalent functionality of high dielectric constants to titanium dioxide" is now taken as admitted prior art. The selection of a known equivalent material based on its suitability for its intended use supported a *prima facie* obviousness determination. See MPEP § 2144.07.

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For claim 6, regarding the limitation “the concentration of the inorganic filler is within a range of $\pm 0.5\%$ with reference to the designed concentration”, since Peters teaches that it is essential that the lens part has uniform dielectric constant throughout, a workable uniformity of inorganic filler in the pre-expanded beads is deemed to be either anticipated, or obviously provided by practicing the invention of prior art, motivated by the desired to obtain an improved uniformity in dielectric constant throughout the lens part.

Response to Arguments

5. Applicants argue at Remarks page 2 that

“Peters describes that granules of a thermoplastic are sieved into a narrow size range. Contrary to the Examiner's assertion, the particles are not expanded. The aim of the sieve is only to make the particle sizes uniform.”

However, since Peters expressly teaches that in order to obtain improved uniformity the particles may be sieved after expansion as set forth above, applicants' argument to the contrary is unpersuasive.

Applicants argue at pages 2-3 that

“Peters is silent regarding forming pre-expanded beads that have been classified by gravity separation. An aspect of the Luneberg lens of claim 1 is uniformity of the dielectric constant. Gravity separation was discovered by focusing on the uniformity of the dielectric constant.

...

Peters is silent regarding molding the resulting pre-expanded beads on the condition that the concentration of the inorganic filler is within a range of $\pm 0.5\%$ with reference to the designed concentration, as required by claim 6.”

However, since Peters teaches that it is essential that the lens part has uniform dielectric constant throughout, and pre-expanded particles may be sieved to obtain improved uniformity of the molded lens part, as set forth above, a workable uniformity in dielectric constant, including a

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workable uniformity of filler concentration in the sieved pre-expanded beads, is deemed to be either anticipated by Peters, or obviously provided by practicing the invention of prior art.

Regarding the gravity separation process, since the limitation has not been shown on the record to produce a patentably distinct article, the formed articles are rendered *prima facie* obvious, and this limitation at the present time has not been given patentable weight.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VICTOR S. CHANG whose telephone number is (571)272-1474. The examiner can normally be reached on 7:00 am - 5:00 pm, Tuesday - Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Victor S Chang/
Primary Examiner, Art Unit 1794